

REMARKS

The specification has been reviewed, and a clerical error of the specification has been amended.

In paragraph 2 of the Action, claims 1-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Hallock.

In view of the rejection, claim 5 has been cancelled, and the subject matter of cancelled claim 5 has been incorporated into claim 1 together with other limitations.

As clearly recited in amended claim 1, a fluoroscopy image apparatus of the invention basically comprises two-dimensional radiation sensor arrays formed of photoelectric conversion elements for outputting charge signals corresponding to an incident amount of radiation, switches arranged in a matrix form under the radiation sensor arrays and connected to the photoelectric conversion elements, a gate drive circuit connected to the switches for turning on the respective switches in case of reading out the charge signals, a readout amplifying circuit connected to the sensor arrays for reading out the charge signals stored in respective pixels, and a control circuit connected to the gate driver circuit and the readout amplifying circuit for controlling the same. This basic structure is known in the art, as shown in Fig. 3 of the application.

The fluoroscopy image apparatus of the invention further includes a digital-to-analog switching circuit connected to the control circuit for switching between a digital video control and an analog video control so as to use one of the controls, a TV reference signal circuit connected to the control circuit, and a picture signal superimpose circuit connected to the TV reference signal circuit and the readout amplifying circuit. The TV reference signal circuit includes a horizontal scanning/

synchronization pulse waveform generating circuit and a vertical scanning/synchronization pulse waveform generating circuit.

Upon actuating the analog video control, the gate driver circuit is driven by signals from the TV reference signal circuit for taking out picture signals from the radiation sensor arrays through the readout amplifying circuit, and the picture signal superimpose circuit superimposes the picture signals on the signals from the TV reference signal circuit by synchronizing with the signals from the TV reference signal circuit to thereby output a TV analog video signal.

In the invention, the digital video control and analog video control can be selected. Generally, the digital video control is used to obtain the image on the radiation sensor arrays as in the conventional apparatus. In this case, however, if the control circuit does not operate properly, the entire apparatus can not be used.

In the invention, even if the control circuit does not work properly, in case an X-ray section including the radiation sensor arrays, switches, gate driver circuit and readout amplifying circuit operates properly, the image apparatus can be used by the digital-to-analog switching circuit, TV reference signal circuit and picture signal superimpose circuit through the analog video control. Namely, the apparatus of the invention can be operated by analog video control even if the digital video control does not operate. The fluoroscopy image apparatus of the invention is, therefore, very reliable.

In Yamada et al., a radiation detector includes an X-ray tube 11, an X-ray solid flat panel detector 33 including TFTs 41 and multiplexer 61, a CRT 25 and a control system including an X-ray irradiation condition selecting portion 19, analog SW setting portion and an image memory. With reference to the X-ray irradiation condition, signals from the flat panel detector 33 and

so on, the radiation detector is controlled to provide the image on the CRT 25. Thus, Yamada et al. discloses the radiation detector by the digital video control.

In the invention, the apparatus includes the digital-to-analog switching circuit connected to the control circuit for switching between the digital video control and the analog video control so as to use one of the controls, the TV reference signal circuit connected to the control circuit, and the picture signal superimpose circuit. These circuits are not disclosed or suggested in Yamada et al. No analog video control can be made in Yamada et al, unlike the invention.

Yamada et al. does not disclose or even suggest the features of the invention.

Hallock relates to an interface for a video source such as video displayer connected to a video display processor (DVP) to overlay a picture with graphics. DVP 150 operates in two modes, i.e. graphics and external video. The DVP 150 receives data and control information on data and control buses from a communication interface 140, returns interrupts and other signals to interface 140, and supplies its composite video output to a display device 170. In the external video mode, a composite video signal received from a video signal source 103 is provided with an overlay in accordance with user defined inputs received from interface 140.

In the invention, the digital-to-analog switching circuit is connected to the control circuit for switching between the digital video control and the analog video control so as to use one of the controls. In Hallock, the graphic and external video modes can be selected, but switching between the graphic and external video modes is not made by the digital-to-analog switching circuit, i.e. digital to analog switching is not made.

In the invention, when the digital video mode does not work, the TV reference signal circuit and the picture signal superimpose

circuit are actuated to provide the image on the image sensor to the display. In Hallock, two different kinds of signals are matched by the DVP and displayed, but the signal from the image sensor is not superimposed on the TV reference signals. Also, in Hallock, although the two modes can be selected, the modes to be selected are not the digital video control and the analog video control, unlike the invention.

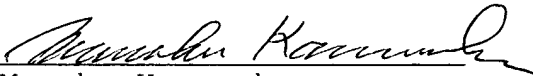
Hallock discloses the interface for two signals, but the interface in Hallock does not disclose or suggest the features of the invention.

As explained above, the cited references do not disclose or suggest the features of the invention. Even if the cited references are combined, the present invention is not obvious from the cited references.

Reconsideration and allowance are earnestly solicited.

Respectfully Submitted,

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